

CLAIMS

1. An LED lamp comprising:

an LED chip;

a reflector with a reflective surface that reflects the emission of the LED chip at least partially; and

a light-transmissive member that covers the LED chip,

wherein the surface of the light-transmissive member includes an upper surface portion located over the LED chip and a side surface portion located below the upper surface portion, at least a part of the side surface portion having a lower transmittance than the upper surface portion.

2. The LED lamp of claim 1, wherein the light-transmissive member also covers at least the reflective surface of the reflector.

3. The LED lamp of claim 1 or 2, further comprising a wavelength converting portion, which covers the LED chip,

wherein the wavelength converting portion includes: a phosphor for converting the emission of the LED chip into

light that has a longer wavelength than the emission; and a resin in which the phosphor is dispersed, the wavelength converting portion being covered with the light-transmissive member.

4. The LED lamp of claim 1, wherein at least the part of the side surface portion of the light-transmissive member has been processed so as to have the lower transmittance than the upper surface portion by subjecting the light-transmissive member to a surface treatment.

5. The LED lamp of claim 1, wherein at least the part of the side surface portion of the light-transmissive member has a transmittance of substantially zero.

6. The LED lamp of claim 1, wherein at least the part of the side surface portion of the light-transmissive member is arranged so as to define an angle of approximately 45 degrees with respect to an optical axis that extends through the LED chip.

7. The LED lamp of claim 1, wherein the light-transmissive member includes a substantially hemispherical or bullet-shaped portion, and

wherein the upper surface portion of the light-transmissive member is arranged so as to define an angle of at most 15 degrees with respect to an optical axis that extends through the LED chip.

8. The LED lamp of claim 1, wherein the upper surface portion of the light-transmissive member is substantially planar.

9. The LED lamp of claim 1, wherein all of the side surface portion of the light-transmissive member has lower transmittance than the upper surface portion.

10. The LED lamp of claim 1, wherein the upper surface portion of the light-transmissive member and/or the reflective surface has a diffusing surface.

11. The LED lamp of claim 3, wherein there is a gap between the side surface of the wavelength converting portion and the reflective surface of the reflector, and

wherein the gap is filled with the light-transmissive member.

12. An LED lamp comprising:

a substrate;

an array of LED chips that are arranged two-dimensionally on the substrate;

a reflector with a plurality of reflective surfaces, each of which reflects the emission of an associated one of the LED chips at least partially; and

a plurality of light-transmissive members, each of which covers an associated one of the LED chips,

wherein some of the light-transmissive members are located in the outermost part of the array of LED chips, and the surface of at least each of those light-transmissive members includes an upper surface portion located over an

associated one of the LED chips and a side surface portion located below the upper surface portion, at least a part of the side surface portion having a lower transmittance than the upper surface portion.

13. The LED lamp of claim 11, wherein the light-transmissive members are combined together on the surface of the reflector.